FROM NOVELTY TO NECESSITY
Applications and Predictions of Marketing in The Machine Learning Age
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About iProspect
iProspect is a global, award-winning agency – driving business performance for the world’s largest brands including adidas, Diageo, Hilton, Burberry, General Motors, Procter & Gamble, Gucci, and Microsoft. The iProspect team works across a network of 4,200 employees spread over 91 offices in 55 countries.

In 2017, iProspect won more than 200 awards including 15 leadership recognition awards and 33 Agency of the Year titles, and was named a Leader in The Forrester Wave™: Search Marketing Agencies, Q4 2017, #1 Global Digital Performance Agency by RECMA, Industry Agency of Choice at The International Performance Marketing Awards, and both Best Place to Work and Most Effective Media Agency by The Drum. Global President, Ruth Stubbs, recently received top honors as the Vision winner for the first Women Leading Change Awards presented by Campaign360. iProspect is part of the Dentsu Aegis Network, a wholly owned subsidiary of Dentsu Inc.

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EXECUTIVE SUMMARY

Machine Learning’s metamorphic influence is being felt across the global business spectrum. The trends we see today around commerce, personalisation, and automation emphasize the need for a global perspective on this topic. A constant stream of new transaction experiences provides businesses with transformative amounts of data, and there are more opportunities than ever to unearth data patterns that enable brands to connect with their consumer.

Success in the increasingly complex digital economy depends on a mindset that is inspired by the future and delivered today. Marketers must ensure their capabilities, solutions, and relationships are data-informed and technology-enabled in order to deliver better business outcomes.

At iProspect, we asked 250 clients across APAC, EMEA, North America and South America their views on the key challenges and expectations for 2018. They said using data to personalise consumer experience is their first priority across all markets while handling volumes of data and technology effectively will be their biggest challenge in 2018. When asked how Machine Learning will affect their business in 2018, 55% of respondents agree it will allow them to make better decisions through processing bigger data sets. A majority (53%) also believe that Machine Learning will allow them to deliver personalised content at scale; and 48% believe it will allow them to automate manual tasks so they can focus on strategic goals. Fewer than 2% think Machine Learning will have minimal to no impact on their business in 2018.

With a better understanding of the technology, clearly defined business goals and the right data, brands’ view of Machine Learning will shift from a futuristic idea to an actionable solution that integrates data, technology, and real-time activations for superior campaign performance.

ROHAN PHILIPS
Global Chief Product Officer, iProspect
Machine Learning won’t fundamentally change the role that marketers play; instead it will enhance what marketers can do by helping us optimize actions, extract hidden structures from within the data, summarize data in real time into more concise views and descriptions. It will help us move our attention from the tactical to the strategic components of marketing, augmenting human experiences and enriching human competencies.

CHRISTI OLSON
Head of Evangelism for Search, Microsoft
Brands are in need of transformational business performance. Marginal gains are no longer enough to define in the digital economy. The advancement of technology has given rise to the expectant consumer who demands brand interactions to be hyper-personalised and hyper-relevant. For half a century, computer scientists have been experimenting with Machine Learning and reveling in the possibilities it presented. While their theories and projections have been compelling, it was hard to imagine a day when Machine Learning would actually solve a business challenge or have an impact on our daily lives. Today, however, we clearly find ourselves at the intersection of available technology, the mass accumulation of consumer data, and the human ability to apply data science to solve commercial challenges and realise profitable business results. The implications of this intersection will change the face of marketing forever.

Every time Google autocompletes a search, Amazon recommends a product, Spotify queues up a new song, or a device recognizes a voice command, people are interacting with algorithms and smart machines. Consumers are more attuned to this, and they see the benefits. It no longer feels like science fiction.

In the midst of all this progress, marketers and consumers alike can get lost in the industry hype and terminology. The term “Artificial Intelligence” often calls up thoughts of dystopian futures, and the term “Machine Learning” sounds interesting in theory, but what is it really? For the purposes of this discussion, here are iProspect’s definitions:

**MACHINE LEARNING**

The customised computer process that algorithmically trains a program to independently recognise trends in data to deliver increasingly accurate and efficient results.

**ARTIFICIAL INTELLIGENCE**

An intelligent and powerful programme that analyses and categorises information without human assistance with an unprecedented level of accuracy and speed.

A.I. is a breakthrough technology that has been made possible by the innovation of Machine Learning. The applications of A.I. in marketing include deep learning, virtual agents, natural language processing such as voice search, and biometrics enabling facial recognition.
The story of digital is really about consumer empowerment and individualism. Consequently, understanding consumer behaviour such as motivations, attitudes, purchasing patterns, triggers and ‘turn-offs’, has become the make or break of today’s brands. The success of Amazon or Alibaba is not accidental. Both businesses staked their future on cracking the code of consumer engagement through smart use of customer data.

Machine Learning, which leverages algorithms to detect patterns in vast volumes of consumer data and actually learns from it, gives businesses opportunity to gain competitive advantage, provide better service, stronger business performance and faster operations. **We’re now at a point where we’re moving from ‘understanding’ to ‘predicting’ behavioural patterns.** This is an exciting time, and there is even more disruption on the horizon.

**DAN KALINSKI**
CEO, iProspect ANZ
Machine Learning should be seen as an enabler of a type of ‘customer data platform.’ It can add more colour and context to datasets that are manually unmanageable due to their size, and provide marketers with the much needed insight they require to have one-to-one conversations with consumers around the world. We recommend organizations embrace these new possibilities by tearing down data silos across the business, bringing datasets together into a unified view, and investing in training people on how to interact with data in scalable ways via Python, R, and SQL. Finally, it is important to cultivate a culture of experimentation while leveraging the cloud to build, measure and learn from data experiments in search of the next great insight.

RAHUL PARMAR
AdTech Lead, Google Cloud
Machine Learning is less about marketing automation and more about the marketer’s ability to solve previously unsolvable problems using technology. Marketers are well aware that they need to amass mountains of data. Making sense of millions of data points and then applying the learning to a business goal is another thing entirely.

Structured data is helpful, but it demands extensive resources such as hardware, software and people to create and maintain. On the other hand, unstructured data is full of irregularities and ambiguities that make it difficult to understand and trust. Consequently, the first step towards making sense of unstructured data is the time consuming investment of hours of labeling and organizing on the part of the marketing team.

As ever-increasing amounts of data become collectable, Machine Learning algorithms are perfect for sorting, ordering, classifying, and enriching that data. Intelligent automation engines can even generate audience groups from historical performance, allocate budgets, and build a bidding strategy. This ability to tackle unstructured data and organize it into something meaningful is a big breakthrough.

For marketers, it opens up amazing possibilities. Machines get smarter as they are fed massive amounts of data continuously generated by users interacting with the system. While Machine Learning empowers companies to be more dynamic and exploratory, it’s important to note that Machine Learning will never supercede the need for humans in marketing. There are crucial things that machines aren’t able to do, like develop a business strategy, apply intuition, interpret results and have meaningful relationships.
Machine learning will open up the "great unknown" for every marketer – whether that is an unidentified customer segment, an anomaly in your website performance or a different view of campaign performance. This is where Machine Learning is changing the game for marketers – enabling them to find patterns and opportunities across massive amounts of data. It allows marketers to achieve new efficiencies by automating some time consuming and repetitive tasks, giving focus to more strategic execution within their roles and enabling brands to deliver more personalized customer experiences at scale.

At Adobe, we are passionate about making Machine Learning accessible to marketers, and lowering barriers to innovation for brands with tools like Adobe Sensei, the company’s AI and Machine Learning framework. Marketers should understand that AI and Machine Learning are tools intended to amplify human creativity and intelligence – not replace it.

TATIANA MEJIA
Group Product Marketing Manager, Adobe
A recent Forrester Research study cited, “Marketers who use Machine Learning are almost three times as likely to report revenue growth rates higher than their industry average. They are also more than twice as likely to occupy a commanding leadership position in the product/service markets they serve.”

Until now, brands refined online messages by designing a few different versions, running a campaign, analysing the results, and finally, opting for the version that worked best. Thanks to Machine Learning, 2018 will be the year that personalization at scale becomes truly possible. Media and messages will be better aligned, resulting in a more relevant experience for consumers.

At iProspect we believe there are four performance marketing areas where Machine Learning can truly put the consumer at the heart of the media plan.

**PERSONALIZING CONVERSATIONS IN REAL TIME**

Real-time is now possible at scale. No prior solution has been able to deliver the level of responsiveness that Machine Learning provides. Consumers see offers change by the minute, based on the data they leave in their wake, and this behavior generates millions of data points for machines to use to become smarter; that in turn lets marketers achieve greater accuracy and therefore spend less to convert more.
“We were able to put Machine Learning front and center with the work we did with iProspect. We needed a smarter way of using our data, and iProspect worked with us to build a proprietary Machine Learning system that analysed more than 12 million individual user ID’s and selected the best 400,000. This was then able to produce messaging based on user behaviour and changed advertising in real-time. The impact of Machine Learning was immediately evident, we were able to drive continuous performance improvement, updated the cluster adding 50% of new IDs every week and reduced bounce rate across all our properties by 17%. It’s clear that Machine Learning can have a transformative impact on our business and I’m looking forward to utilising the possibilities in the months ahead.

To succeed in this ever-changing digital economy, it is imperative to be driven by a pioneering and forward-looking mindset: iProspect has been and still is the right partner to compete and win thanks to their innovative approach and solutions.”

GIAN LUCA DE SARIO
Head of Media Planning & Budget, Wind
II INCREASING EFFICIENCY AND PERCISION

For brands, managing high volumes of individual conversations without compromising the quality of each one can be a true challenge. An effective conversation requires both careful listening and a relevant response, and Machine Learning can help with both.

Machine Learning opens up the scope of possibilities; from being able to access better segmentation, to applying more accurate performance attribution, to leveraging huge data sets in performance marketing.
Eurostar is a high-speed railway service connecting London with destinations like Brussels and Paris. Eurostar asked iProspect to tackle their constant business challenge: how to sell the unsold seats on their trains, compete with the airlines, and ensure that Eurostar appears on top of the search results when customers query by destination.

iProspect had to devise a strategy to answer it in a smarter way, and return better results. iProspect provided the in-channel and customer experience and D2D provided the technical, algorithmic and statistical knowledge. The custom Machine Learning media buying system for Eurostar, powered by iProspect CORE, was able to automate the media buying process and optimize the results at the fraction of a price. The team made smarter portfolio buying decisions, improved search account structures, and automated search query report processing. In just five weeks, CORE reduced CPC by 12%, increased conversion rate by 26%, and drove a CPA decrease of 30%.

EUROSTAR SAYS ‘BONJOUR’ TO MACHINE LEARNING
III PREDICTING CONSUMER BEHAVIOR

Machine Learning has the potential to reduce much of traditional marketing’s imprecise nature. Machine Learning offers decision makers the ability to understand a consumer’s interests; interests they may not even know they have. This, in turn, allows marketers to provide solutions people want before they know they want them by creating optimized content delivered at real-time.
iProspect brought Machine Learning to Facebook by pitting human against machine for Australian retailer, Dan Murphy’s, in both audience planning and campaign optimisation. Both the Human and Machine campaigns were set up with equal budgets, flight dates, creative and the primary objective of driving Return on Investment (ROI) for the client. The Human employed their experience, client knowledge and historical performance while The Machine campaign used automated tools to create and segment three audience sets by using the campaign objective and historical performance. The Machine was then able to allocate budgets and build a bidding strategy.

Once the campaign went live, the Human spent the duration of the campaign monitoring performance, extracting and analysing data and making optimisations. At the same time The Machine was ingesting the campaign data and through Machine Learning, making delivery, budget allocation and targeting optimisations every four hours over the full ten days. The Machine generated a 37.7% stronger ROI at a 20.9% lower CPA than that of the human campaign.

Not only did the Machine outperform its human rival but it was the most cost efficient revenue driving campaign of its kind in 2017. The use of these tools significantly reduced the team’s time spent on day to day tasks and instead, enabled them to focus on looking forward and building strategies that will guarantee a competitive advantage for our client tomorrow and well into the future.
One of the most important factors for customer loyalty and satisfaction is a business’ ability to deliver an outstanding customer experience. This is a key differentiator. In the “always on” marketplace, consumers demand efficient, friction-free resolutions to their questions and dealings with a business. Machine Learning helps to automate repetitive tasks, provides answers to frequent queries, and even flags communication from frustrated people so that bad experiences can be handled quickly by a human.
U.K. online grocer Ocado uses Machine Learning to take supermarket trips out of the equation by enabling shoppers to purchase items online through its convenient web and mobile applications. Items are then picked and packed in automated warehouses and shipped directly to customers in a one-hour time slot of their choosing. Ocado’s delivery punctuality is 95%, order accuracy is 99%, and its service footprint now reaches more than 70% of the U.K. population.

One of the first Machine Learning algorithms Ocado created tags and categorizes customer emails and then prioritizes them for response. The contact center receives thousands of emails each day and Ocado wanted to automate determining which ones needed to be answered immediately and which ones could wait. For example, a first-time customer expressing delight in using Ocado doesn’t need to be responded to with the same urgency as a customer who is missing an item from his order or who won’t be home to receive the delivery.
To deliver success in the expectation economy, brands must create enhanced experiences that add value and remove friction from every stage of the consumer journey. We know that machines can absorb and process data sets of unmatched volume at scale, capacity and speed. It makes sense for Machine Learning to become integral to segmentation, purchase modelling and ensuring a seamless consumer experience. Once a brand is effectively offering relevant experiences to individuals, marketing teams can then focus on more innovative and impactful communication strategies using voice technology, intelligent content, visual search and more.

JOANNA CATALANO
CEO, iProspect Asia Pacific
In the previous sections, we have covered how Machine Learning opens the scope of possibilities for brands. However, Machine Learning isn’t a silver bullet for every marketer’s problem. Savvy marketers need to understand its current limitations and challenges.

LEARNING REQUIRES TIME AND SOME DEGREE OF QUALITY CONTROL, EVEN FOR A MACHINE

Two aspects are fundamental for an effective learning process, whether the student is a human or a machine: valid initial input and time. Algorithms require valid input and are not (yet?) capable of evaluating the intrinsic quality of an informational entry. In other words, algorithms are only as good as the data they are fed. Poor quality input will lead to wrong conclusions, which could turn into wrong decisions. Because learning is a function of time, it is important to keep in mind that Machine Learning benefits aren’t immediate and require some time to deliver valuable outputs.

MACHINES CANNOT REPLACE HUMANS

Although Machine Learning will be valuable to discover patterns in users’ behaviours, we should never forget that machines are devoid of perspective on crucial human issues like ethics or privacy. With the increasing pressure to safeguard consumer privacy and new regulations like the EU General Data Protection Regulation (GDPR), human supervision of why and how data are processed by Machine Learning algorithms will be fundamental.

Marketers must pay special attention to how they collect consumer data. In addition, marketers must actively partner with relevant third parties, such as legal advisors and data specialists, to assure compliance with regulations and deployment of best industry practices.

THE PARADOX OF CONTROL

The idea that ad fraud will be easier to prevent, and ad visibility will be more reliably measured and reported is not wholly true. We will still need to actively exclude data from uncorrelated or suspicious sources such as bots and unexpected consumer behaviours. Only humans will be able to navigate and address these individual nuances to ensure clear campaign performance.

Since Machine Learning is still just a tool, its value sits largely in the hands of the person programming the patterns that the systems are looking to identify. This is no different than today when advertising and marketing executives apply analytical thought to pose the questions that will help them identify everything from product market fit to audience behavior. That
said, because these new technologies require new skills, it’s plausible that advertising and marketing executives will wish to become proficient in running their own queries on data so that they can answer their own marketing questions without needing another team member to pull it for them. Moreover, it’s fair to assume that marketers will also need to learn what the limitations of queries are so that they can ask the right questions in order to identify the patterns that will be most useful for them.

ASHER RAPKIN
Machine Learning, Product Marketing, Facebook
Machine Learning will allow decision-makers to have a deep and well-informed insight into cause and effect relationships in their overall communications strategy. Ad fraud will be easier to prevent. Ad visibility will be more reliably measured and reported. Ad performance tracking will need to coexist with intelligent privacy protection tools. The economic incentive is undeniable. Further, with it getting cheaper and easier by the day to deploy a Machine Learning implementation, clients run the risk of missing the boat as their competitors get aboard.

VARUN PRAMANIK
Lead, Paid Search, iProspect US
Using Machine Learning technologies, we are able to improve on current performance in real time, while taking historical trends into perspective. It is, however, important to let humans set the strategies and KPI’s strictly tied to the overall business strategy. Machine Learning is a game changer for the industry.

MORTEN BRUHN HØJSGAARD
Executive Director, iProspect Denmark
LEARN THE TECHNOLOGY

First, review the tools you’re currently using. You may already be paying for Machine Learning features you aren’t utilizing. Then, survey the landscape. For most brands and marketers, it is probably better to learn what’s available instead of developing new Machine Learning technology. It’s a win-win solution as the more people use the tools, the better those tools become for everyone.

MACHINE LEARNING ISN’T AN INSTANTANEOUS “BETTER” BUTTON

Once you’ve launched a Machine Learning tool, it will take time to test and iterate. It’s important to give the tool time to do the “learning” part of the process before expecting performance improvements.

WHEN LOOKING FOR DATA TO FUEL MACHINE LEARNING, DON’T LET PERFECT BE THE ENEMY OF GOOD

A marketer should start with first-party data, like site analytics, customer profiles and product feeds. The goal isn’t to achieve some mystical grand theory of data in which every single piece is connected and accurate. The goal is to tap into the wealth of data you already have and use it to fuel tools that incorporate Machine Learning.

EXAMINE YOUR CUSTOMERS’ BEHAVIOUR AND IDENTIFY OPPORTUNITIES WHERE MACHINE LEARNING CAN REMOVE FRICTION

Brands that only focus their Machine Learning efforts on their internal data will miss out on one of the biggest opportunities: analyzing consumer behavior to provide a better customer experience. Every interaction a person has with a brand provides valuable information, and this wealth of data is perfect fuel for the strengths of Machine Learning. In addition to optimizing efficiency, Machine Learning is a fantastic tool to help brands create happier customers at scale.

START WITH YOUR BUSINESS GOALS AND APPLY MACHINE LEARNING WHERE IT MAKES SENSE

Every brand’s goals are a little different, and there is no need to get anxious and over apply a technology just because it’s available. Elements of a marketing campaign that have significant, regularly updated data components are great candidates for machine learning. If there’s data coming in, Machine Learning can utilize it to continually iterate and optimize.
Today marks a clear intersection between available technology, the mass accumulation of consumer data, and the human ability to apply data science to solve commercial challenges that realize profitable business results. The implications of this intersection will change the face of marketing forever.

JEREMY HULL
VP, Innovation, iProspect US
The Fourth Industrial Revolution is undoubtedly here, blurring the lines between physical, digital, and biological spheres. We believe Machine Learning will have a profound impact on every aspect of marketing, similar to the data revolution of the past decade. With its capacity to process vast amounts of information at unprecedented speed, Machine Learning has morphed from novelty to necessity. It fundamentally changes how brands interact with consumers. New marketing norms will include a holistic understanding of all consumer touch points, personalisation of content, and a much greater expectation of privacy. In order to succeed, brands must harness their data to build intelligence that leads to a new age of consumer experience.