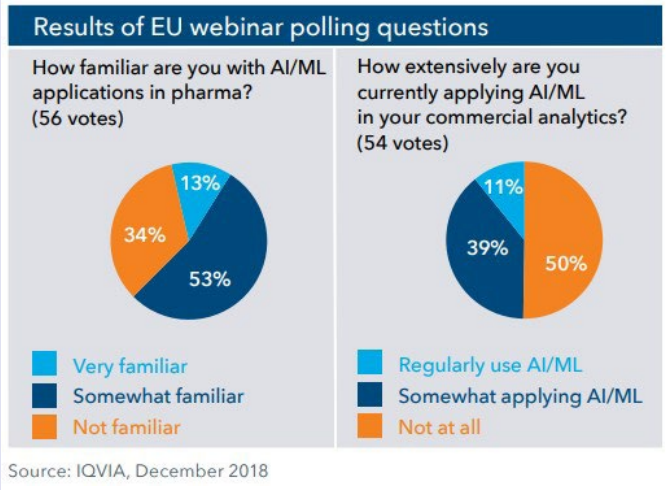
The Myth and Realities of AI/ML in UK Pharma

Artificial Intelligence is no longer science fiction. It's simply science. Data science. Anyone who uses the internet has been affected by Artificial Intelligence (AI) and Machine Learning (ML), whether they realise this or not. Advertising that mysteriously appears based on previous Google searches, traffic prediction apps like Waze that always know the fastest route, and services such as Uber all use some form of AI built on expansive, well organized data sets and smart algorithms.

There is a great deal of promise for AI in the healthcare industry. Datasets have become larger and more complex opening up new opportunities, and technology is equipped to store and make this data research ready. AI/ML algorithms are data hungry, hence this combination of big data and advanced technology creates the right environment for the generation of insights.

However, current AI/ML applications for healthcare remain limited. Research conducted by IQVIA revealed that very few pharma companies are regularly using AI/ML, and the majority lack familiarity with how it can be applied effectively in healthcare.



Source: IQVIA, December 2018

How to harness AI/ML without falling for the hype

AI/ML impacts healthcare, and specifically Business Intelligence (BI) and Primary Market Research (PMR) in two key ways:

1) **Greater efficiency**

One of the greatest transformations brought by AI/ML is the way we manage operations in market research. We have long discussed the increasing challenges of reducing response rates and the impact of screen outs on potential future participation in research.

AI/ML allows recruitment of HCPs to become smarter by mining historical data in order to profile and inform who, how and when to best approach potential respondents. This focuses survey targeting and limits the number of interactions with panellists to what is strictly necessary.

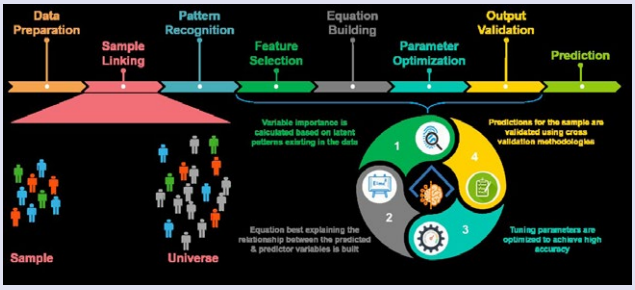
Natural Language Processing (NLP), a subset of AI, revolutionises the way we can approach the analysis of unstructured text in research. Traditionally, it has been common to restrict the number of open-ended questions in surveys since respondents don't typically type much and any text entered needs to be coded for it to be useable. NLP opens up the possibility of voice to text data capture (combining Alexa/ Google API with NLP). This allows respondents to dictate their answers to a survey, rather than type them, just as they would speak into their Dictaphones during clinical practice. This technology is now available to allow for the automated and instant coding of free text responses.

To maximise these opportunities, we need to rethink the way we approach research. Simply applying these techniques to traditionally designed research won't necessarily work. The potential exists to allow physicians to express themselves in their own words, without constraint and quantitatively. NLP allows us to include many more qualitative or softer questions in the heart of a quantitative survey, hence moving the line between qualitative and quantitative methodologies.

2) **Deeper insight**

Any AI/ML algorithm requires a significant amount of data to feed the algorithm and create exponential value. A stand-alone market research study is unlikely to produce the volume of data required to be worthwhile for AI/ML. However, if the primary data is linked to Real World data sources, within the confines of GDPR, then a significant source of data can be generated. Long running performance trackers and large syndicated datasets can also provide the volume of data required.

The type of analysis would include predictors of future behaviours or support extrapolation to universe for segmentation purposes.



AI/ML will change the way we operationalise research, for the benefit of our respondents and the quality of the data captured. Evaluate the data you have at hand. Is it significant enough in size and longitudinally for a potential AI/ML algorithm to be deployed to mine deeper insights? What can and can't be done in the UK market due to GDPR and privacy rules will constrain some of the potential for insight generation via AI/ML. Most critically, a pragmatic approach is required in order to avoid falling for the hype.

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