SEVEN STEPS TO IMPLEMENTING **SUCCESSFUL ARTIFICIAL INTELLIGENCE** PROJECTS

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Artificial Intelligence (AI) and Machine Learning (ML) are becoming increasingly mainstream. When applied in an organisational context effectively, AI/ML can significantly increase customer value and enhance business outcomes.

Utilising data and AI at a business level to drive the overall value of the customer is very different from using it at the tactical level to optimise a channel or clicks and warrants considerable upfront planning.

In this paper, we explore the steps that organisations need to take to implement AI into their organisation to ensure the greatest chance of success.

HOW AI CAN ADD STRATEGIC VALUE TO YOUR BUSINESS

1. When AI is used to augment human intelligence. By using more accurate predictions, forecasts and pattern or, anomaly detection to better understand customers and the wider market, organisations are able to leverage their strategic thinking to achieve competitive advantage.

2. When AI and automation are used to optimise operations, thereby reducing inefficiencies and wastage which will ultimately reduce cost.

3. When AI is used to leverage data from a variety of different sources and industries to create a value greater than the sum of its parts, applicable to a variety of end users. This can result in finding value in data as intellectual property. This can be open source data, for example, weather data, or partner data, such as mobile phone or property data.

DEFINITION: THE DIFFERENCE BETWEEN AI AND ML

Machine Learning is the process whereby machines learn to predict outcomes or find patterns from a large number of examples (big data). Algorithms are fed data and, like humans, learn from their errors to improve their performance. Traditionally this was done with easy to interpret models such as linear regression, where cause and effect are clear. As computational resource has become cheaper and readily available via the cloud, more complex models such as decision trees can find thousands of combinations of input features to predict outcomes. AI tends to refer to algorithms called neural networks. Neural networks are able to identify non-linear patterns, often unclear to humans, to create highly accurate and nuanced predictions. The holy grail of AI will be general purpose AI whereby machines can learn to perform tasks without set objectives, however this is still a long way off. Currently AI algorithms can be automated to detect patterns, continuously learn, understand complex problems and make decisions at speed.

SEVEN STEPS THAT NEED TO BE CONSIDERED IN EVERY AI PROJECT

1. Diagnosing if AI is right for the business objective

Diagnosis is the first big hurdle in any new project. The process must begin with a problem-solving situation to assess whether AI is the right solution for the objective.

Appropriate projects are ones where AI can potentially deepen understanding or add value with speed, accuracy or automation. For example, product development, gaining a deeper level of customer insight or even day-to-day operations.

The next consideration is how mature the business is in terms of its data management. The general consensus is that an organisation does not necessarily need to have reached a level of maturity in data management and governance before considering AI, because in many cases it is possible to outsource to a third party. This does depend on whether the company is looking to adopt the technology in an internal-facing or external, customer-facing capacity. For the latter, a certain level of maturity needs to have been reached, otherwise there are a number of risks. This could include unexplainable black box outcomes for customers which may not be GDPR compliant or the risk of reputational damage. For innovation or general hypothesis-based experiments, it is not necessary.

When AI is deployed tactically, 34% of shoppers will spend more money online.

Source: McKinsey

The best way to drive value from AI is to focus on the transformation that is required within the business and agree on objectives and outcomes that need to be resolved with the application of AI.

Start with the position of answering key questions. If AI is the best solution, use it. But using it for the sake of it is rarely useful and often an expensive and worthless exercise.

When employed strategically a business is 3.5 times more likely than others to say they expect to grow their profit margin by up to five points more than industry peers.

Source: McKinsey

2. Understanding how AI projects differ

An AI project requires a lot more harmonisation than any other technology driven project. Silos, both data and cultural, can be a problem and need to be broken down. Cross functional teams, comprising a mix of skills, are critical to project success. It is a different and innovative way of working and takes a great deal of planning and team work to achieve what can look like simple outcomes.

The project also needs a strong leader who is close to the corporate strategy and can brief the hybrid team to deliver fast, accurate results. This requires complex orchestration, driven best by an understanding of business, data transformation, data science and technical capability.

Once the foundations are built, deploying AI in the right place at the right time or creating user interfaces will be easier, but in order for the project to have integrity, this planning piece is critical.

3. Leading with C-level support

The successful integration of data science relies on bridging the intersection between business strategy and AI. Research reveals that the major reasons for a stark increase in the failure rate of IT projects is a lack of C-Level support. This also applies to AI projects and could make or break the success of the project. It is important that a senior stakeholder is appointed to the project team to ensure that the data driven results are implemented throughout the business and that the desired business outcomes are understood.

4. Putting the right team in place

The ability to translate strategic objectives and business models into the types of AI that can advance them is crucial. You need to ensure that the project is resourced correctly with the right level of organisational, domain and data science knowledge. This is probably the most difficult of the steps involved.

In many cases analysts are being rebranded as data scientists. A data scientist predicts the future based on past patterns, generates its own questions and gives an accurate prediction of the value of a business outcome once solved. A data analyst, on the other hand, finds meaningful information from data, seeks answers for other sets of questions and addresses business problems. Whilst to the uninitiated the differences might feel nuanced, in reality they are stark and very distinct.

Demand for data scientists and data engineers is projected to grow by 39% over five years.

Source: The Quant Crunch

Many organisations cite the inability of data scientists to work towards business outcomes or communicate in a non-technical manner as a key issue. Successful AI is dependent on hybrid team members that can work at the juncture of strategy, business models, code development, algorithm creation, and product development—a rare breed, certainly.

There are also many unknown, unknowns. Often in model development, it is not until you try something that you realise the dead-ends and pitfalls. It takes iteration to get it right. This can often knock out time-scales, limit progress and reduce team morale.

5. Using the right data

AI tasks require large sets of data (enough examples to learn from) and the results only generalise well when the data is bias free, or the biases are known and measurable. Similarly, if data is dirty or full of noise/errors, models will not perform well. If you do not have the data in good shape, you will not get best results. As such, the most time consuming and computationally expensive part of the process is the wrangling (prepping) of the data.

6. Having the right IT Infrastructure

You need to ensure you have the IT infrastructure in place to support the efficient continual development and deployment of AI models.

This is required in order to make models robust, with ongoing access to data. Furthermore, a lack of efficiency and optimisation of computational resources, as demanded by the engineering requirements of the data scientists, can cause projects to fail, or cost 10 times what they should.

One of the most common failings is the ability to productionise the models. This happens when IT fails to support the development and deployment of new models, meaning the business fails to drive the project towards a successful outcome.

More than half of technological projects fail. This is up from 32 per cent in 2014.

Source: Innotas, a cloud portfolio management provider

7. Doing the right thing - Explainability and data ethics

Explainability is a fundamental part of AI and organisations need to demonstrate how a model works and why it made the decision it did. The key to this is to document absolutely everything.

Often there will be the requirement to look back to previous iterations of algorithms particularly when trying to answer the crucial question: how did the model arrive at this outcome?

There are a number of reasons why Explainability is important, but the most significant is the recent change in data protection legislation under GDPR. It is a case of plain and simple ethics. Understanding a model to anticipate any unintended consequences and potential bias that could impact vulnerable customers (or indeed any customer) is morally the right thing to do. Data ethics are increasingly coming under scrutiny and organisations around the world are creating ethical frameworks to enable data science to move forwards, but in a responsible and answerable manner.

61% of companies with an innovation strategy are using AI to identify opportunities in data that they would have otherwise missed compared to only 22% for companies without this strategy.

Source: Narrative Science

OPTIMISING THE CHANCE OF SUCCESS

The best way to find success is to have a good business case to answer in the first place. To do this, it is necessary to have domain knowledge and expertise and add human intelligence. AI is after all an extension of human decision making. The real results are in how well it is all orchestrated to consistently deliver.

To optimise the success of an AI project, it is crucial that consistency is maintained along with an understanding of how and where data is being deployed in order to build brand trust, business trust and consumer trust.

At present, customers are being treated inconsistently across channels and across the desired business outcomes. But through successful application of AI they can receive a fulfilling brand experience.

Think big but start small. Begin with a set of prioritised and well-defined business outcomes. For example, 20 per cent uplift in incremental revenue from existing customers.

Once the objective is established (in a SMART context) a Proof of Concept (POC) can be tested. This will ensure that you have access to the right data.

It is also best practice to think beyond the constraints normally worked within. The formation of a skilled hybrid team means a problem can be viewed from all angles and the most innovative solution to the problem can be found.

The appointment of a C-Level stakeholder to oversee the project, will ensure synergy between AI and business objectives.

IS AI WORTH THE INVESTMENT?

Generally speaking, the answer is yes. It delivers superior business value faster, with most organisations driving more value from their data when they work outside of the current confines of their existing data environment.

The key ingredients for a successful AI project are understanding what success looks like, having access to the right data and the right resource, being able to explain how the model does what it does, and of course sourcing the right supplier.

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ABOUT OUTRA

Outra helps brands deliver better business outcomes by using the best data, data science and technology.

We are a predictive data science business that uses data to transform businesses. We bring a modern, science-led approach to delivering actionable customer insight at speed. By using AI we maximise the value and predictability from data to learn from the past, optimise the present and shape the future.

To find out more about how to transform your business with AI and ML, contact us today at sales@outra.co.uk or phone 020 3880 8485.

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