

How to succeed in machine learning as an organisation

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Machine learning (ML) is exploding, with smart algorithms being used everywhere from email to smartphone apps to marketing campaigns. The goal of deploying ML within your business applications is to improve your bottom line and your company's competitive advantage. But in the larger scheme of your organization, making the most of the time and resources you invest in this process goes far beyond the algorithms. The IT decision-makers in your business need to make sure everything factoring into your ML implementation works cohesively together to maximize effectiveness.

Below are some the factors you need to consider within your organisation for you to succeed in implementing ML projects.

1. Define your business objectives

Many ML projects fail to deliver due to inflated expectations of what the models can do. Before starting an ML initiative, identify the goals of the project. Start with the business goals. What metrics are you trying to improve? For instance, are you trying to reduce your customer churn rate? Reduce cases of fraud? Reduce the time spent on processing customer applications? From the very outset, it's important to clearly identify the use case, define measurable goals, benchmark current performance, and then realistically define success criteria.

1. Ensure stakeholder alignment

ML projects can also fail to succeed due to a lack of consensus between various stakeholders. Once you've identified the use case, map out the different stakeholders who need to be involved. To figure this out, you'll need to have a plan for how the output of the machine learning model, will be used and who will use it. There's no point in having an ML system crunch numbers when the output is either unusable, inaccessible, or simply not planned to be a part of the decision-making process. It's essential to plan out how the predictions will be made accessible to the downstream processes or people.

1. Hire the right staff and set them up for success

The shortage of available data science talent has been well documented. Hiring for the data science role remains a fundamental challenge. But success with ML requires more than data science skills. It's a team sport requiring multiple different roles, including data engineers, ML architects, and operations.

Organising and scaling the team effectively is another challenge. Do you have the right people and skills in-house to take the project from idea to implementation? You'll need to determine whether you build up the skills or hire someone to help complete the project in a given amount of time. Building up the skillset helps with scale in the long run, whereas third-party advisory services may help get the project

up and running quickly.

1. Organise reliable data

Data quality is essential for machine learning tools to carry out their work efficiently. If you opt for a supervised learning model, this source data must also be labelled so that the algorithm can learn to predict the correct exit label. If you opt for an unsupervised learning model, it will not be necessary to have labelled data, but it must be 100% reliable.

1. Use a Diverse Toolset

There are dozens of ML tools available, many of which you can use for free. You've got popular open-source frameworks libraries such as TensorFlow, PyTorch, and ML libraries. Then there are subscription-based options including Amazon Machine Learning, BigML, and Microsoft Azure Machine Learning Studio.

There are countless resources available. On average, data scientists use a minimum of 5-7 tools and often far more.

1. Start with supervised Machine Learning

Supervised Machine Learning makes it easy to make predictions using historical data. The word “supervised” has nothing to do with a human “reviewing” the predictive algorithm, it is only one of the possible techniques of Machine Learning. With Supervised Machine Learning you can:

- Predict demand (how much product to buy next week)
- Predict customer churn (which customers are going to the competence next month)
- Detect fraud (which purchases or transactions are fraudulent)
- Predict cancellations (of hotel reservations, restaurant tables)
- Prevent payment defaults (predict whether a customer will stop paying)

The main advantages of supervised machine learning over other techniques are that it is easier to understand; answers specific questions (such as those in the previous paragraph) and has powerful methods for evaluating the quality of algorithms before they are implemented in production environments. There is no doubt about it: it is the best technique to get started in the company.

1. Communicate

Share as much of the business context as possible. Once the data scientist and engineering team starts building, they have to make a lot of choices. The better they know your priorities, the more they can make the right decisions. You should at least tell them about:

- Strategic priorities
- Problems with the current process

- Inputs and outputs
- Performance metrics
- Expected accuracy

There is no doubt that the value delivered by ML projects is much high. What organisations need to do is follow a proper process in terms of developing the models to get more accurate results.

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