AI:SA

The State of AI in South African business 2021

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Foreword

The 4th Industrial Revolution is upon us.

Take yourself back to February 2020. Life was relatively normal, kids were at school, we physically went into work and everyone was more certain of the paths they were on. A year later, people of all ages are now a lot more tech savvy having been forced to work-from-home, do online schooling or have online gatherings just to keep in touch with loved ones. We have had to embrace the change and step out of our comfort zone and learn how to use technology to augment everyday life.

Think about how this has potentially changed the path of our future with technology. It starts to raise difficult questions like should parents be holding back their children from using technology until a certain age and what does that choice mean for the younger generations future potential? Personally, I think this era will have the biggest technological impact in society, but we will only really know this in years to come.

As a parent and a technologist I find this both exhilarating and slightly scary. The key, as always, will be communication.

For example, some positions are in danger of becoming completely redundant, even something as vital as legal advice or medical advice. AI built within systems will depict the adjudication or prescription result based on factual historic data. Scary to think that algorithms could potentially decide one's fate. But can a machine really deliver the bad news or does it take another person to guide the person through acceptance?

Perhaps it is not all that scary if we simply choose to combine AI potential with human potential. We need leaders like you to embrace new systems rather than cling to the old, defunct ones. Do not wait, act now and be a leader where humanity and technology combine.

by Shaun Cothill

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Introduction

South Africa is behind in digitization but is catching up fast.

COVID 19 has forced more people online and boardrooms across the country have given their digitization renewed focus. One of those focuses is the efficiency driven by Artificial Intelligence and Machine Learning (AI/ML)

But what constitutes AI/ML? When we talk about AI/ML it is important to distinguish between two types of Artificial Intelligence. We are not referring to what is known as general intelligence, the thinking capabilities associated with humans. This still sits in the realm of science fiction and it is not known whether a state of general artificial intelligence will ever be attained. Instead, we refer to the Artificial intelligence that exists now: data driven processes and automation with learning capabilities. This is all the technology that you see around us: self-driving cars, natural language processing and predictive models, to name a few.

We sought to assess the sentiment and adoption outlook for these technologies amongst South African business and IT professionals. These sentiments appear to be mixed and senior stakeholders are performing a balancing act between current requirements and future expectations.

We also wanted to understand South Africa's position internationally. How did we differ from our European and North American counterparts?

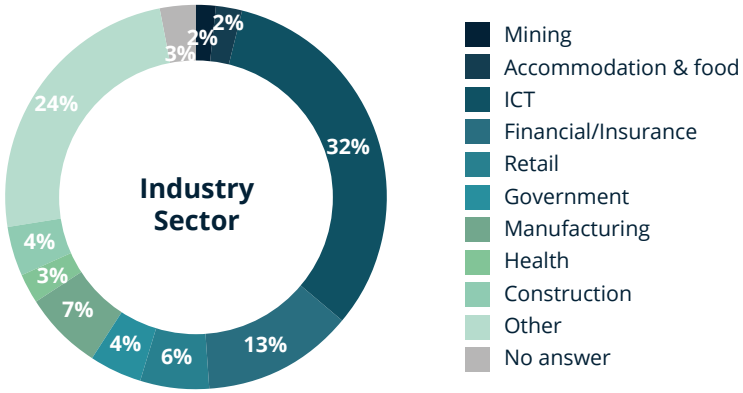
We would like to thank the 985 survey respondents for their time and invaluable insights into this ever evolving landscape

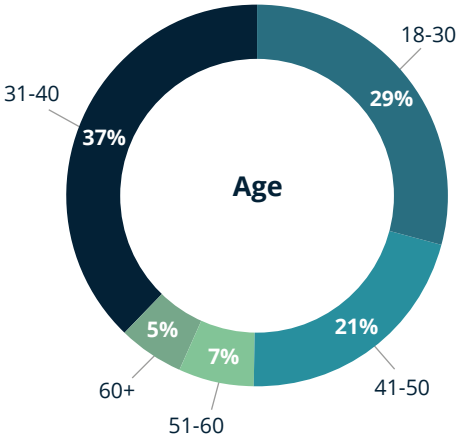
The Data

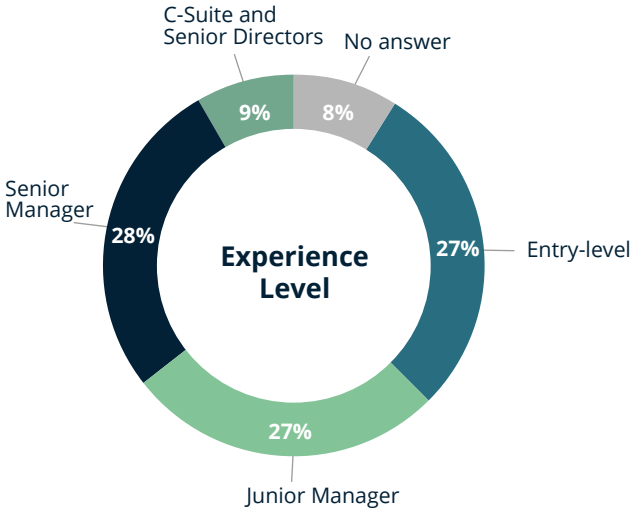
Demographics

985

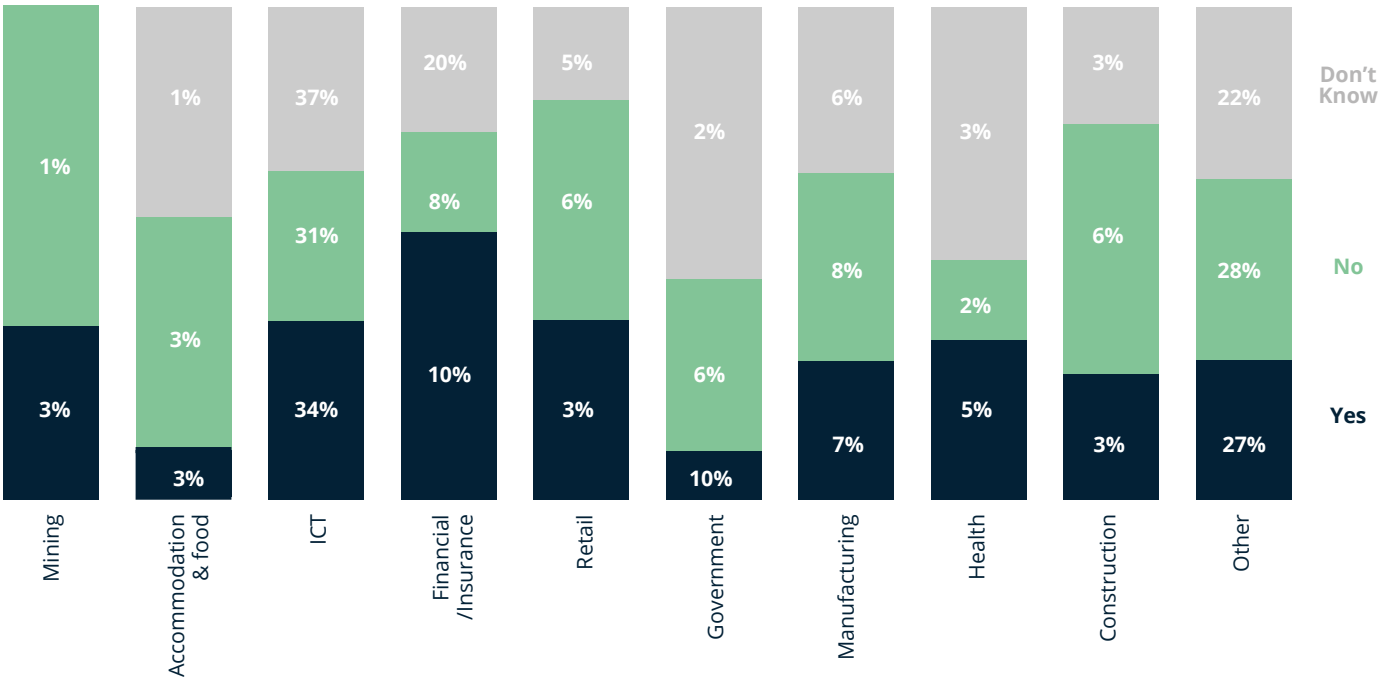
No. of survey respondents





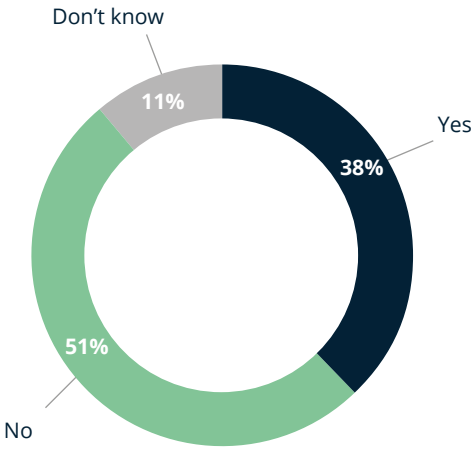


↘ Does your business already implement AI/ML in any form? Split by industry sector

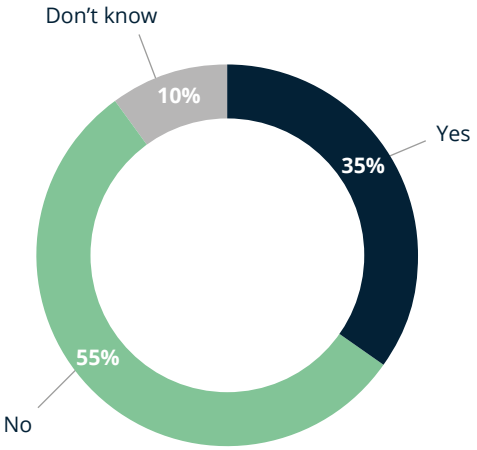


Outlook

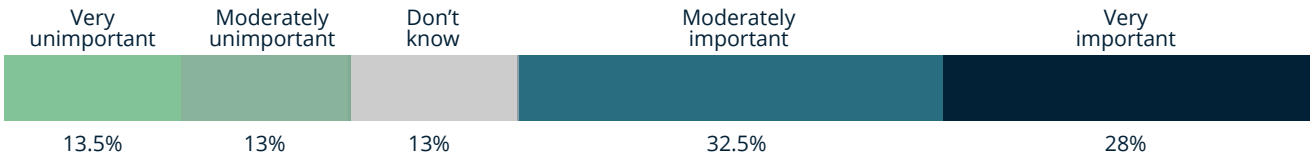
↘ Does your business already implement AI/ML in any form?



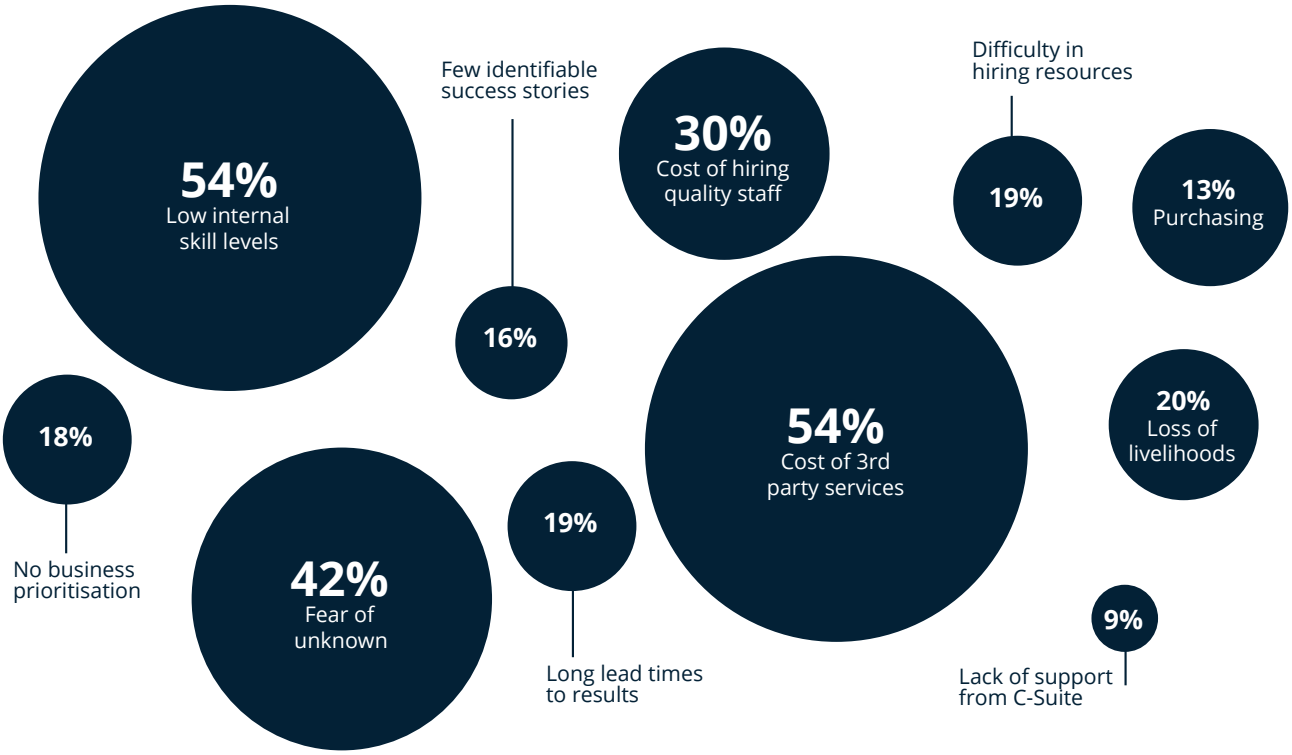
↘ Do you have internal resources focused on AI/ML?



↘ How important is it for you to start implementing AI/ML in your business in the next 2 years?

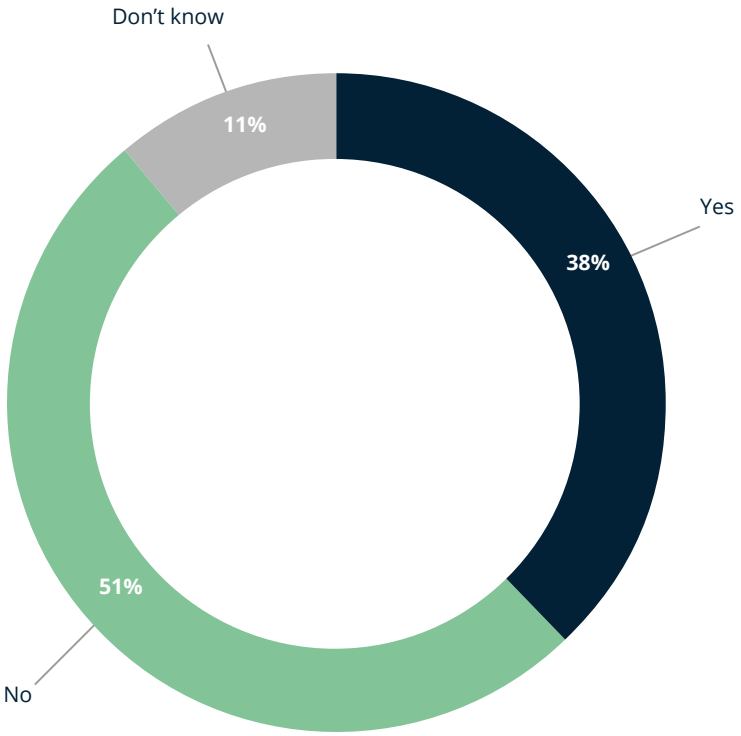


↘ The most important challenges in adopting AI.



Sentiment

↘ Is your desire to implement and experiment with AI/ML supported by your business?



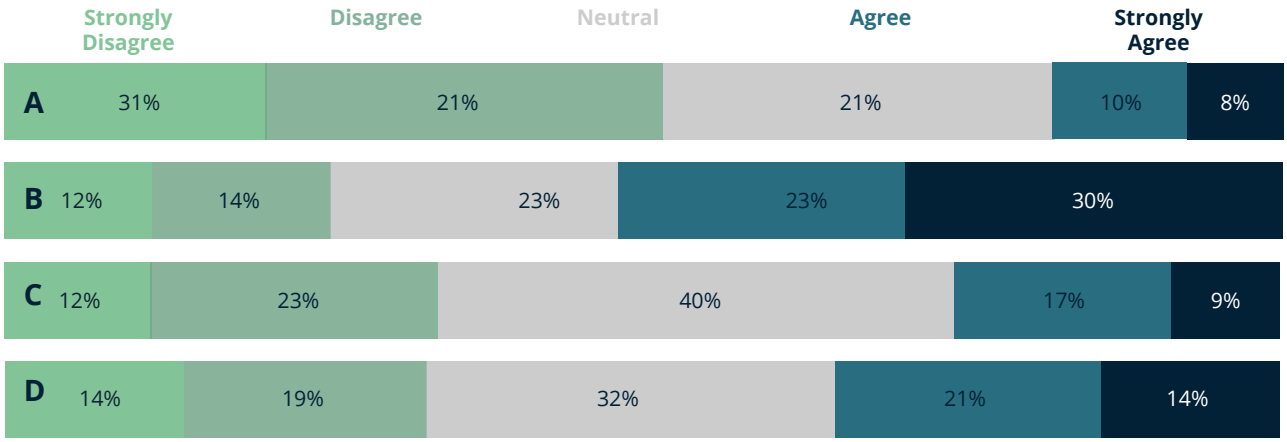
↘ On a scale of 1 - 5, how much do you agree with these statements:

A) South African businesses are well prepared for AI/ML adoption.

B) AI/ML is not understood well enough at an executive level.

C) Adoption of AI/ML will gain traction in 2021 in SA.

D) COVID-19 is the primary driver of AI/ML adoption in SA



Resourcing & Skills

54%

Cited *Low Internal Skills Levels* as most important challenge to adoption

35%

Currently have internal resources focused on AI/ML

60%

Rated the need to implement AI/ML in the next 2 years as important

18%

Felt S.A businesses were well prepared for AI/ML adoption in 2021

Insights

There is a clear degree of pessimism to the level of skills and knowledge to be found in the South African market. This pessimism is more exaggerated at a senior management level where more than 60% rated *Low internal skill levels* as the no. 1 challenge facing AI/ML adoption.

However, this is not a localised phenomenon. Gartner's 2020 international survey of CIO's (*) also showed *Skill of Staff* to be the clearest roadblock to greater AI adoption.

Combining this with the fact that the global AI and ML jobs listings have grown almost 75% over the past 4 years leads us to a clear set of winners and losers. The winners will be the skilled employees. With increased demand they will have greater bargaining power that will start to push up salaries. The losers will be the employers, who will have to fight ever harder to acquire and retain this scarce and expensive resource.

What is the outlook for South Africa's AI/ML job market? With nearly 60% of our respondents rating the need to implement AI/ML in the next 2 years as important to very important and only 35% of businesses saying they currently have internal resources focused on AI/ML. I would suggest that the skills gap will continue to grow. Newly-skilled entrants into the market will need projects and guidance to develop into the valuable employees required to justify the salaries needed to keep them.

*(https://www.gartner.com/smarterwithgartner/3-barriers-to-ai-adoption/)

Solutions

There appears to be 3 broad ways that a balance can be found between these market forces:

- ➔ Training and specialization
- ➔ Skills Outsourcing
- ➔ 3rd Party Software

Unless you have very deep pockets or the patience to sit around for the market to catch up then training is your best bet for managing internal skill. There are a number of actionable approaches to doing this but here are the 3 that we like the most. *(1) Programmatically invest in training*: Skills development in the field of AI is hard. It can't be achieved through standard corporate training models. Instead, harder choices have to be made on carving out time and resources for the trainee. Bringing in strict learning time, applicable projects and mentors will ensure that the trainee can focus on producing the results and can be structured into the working day.

(2) Partner with universities or specialised schools. Start by assisting in the creation of a curriculum that will benefit your businesses' AI needs specifically. Not only will you have more options in the AI fields that you require the most but you will also have access to the top students. These students will also be paying for their own tuition.

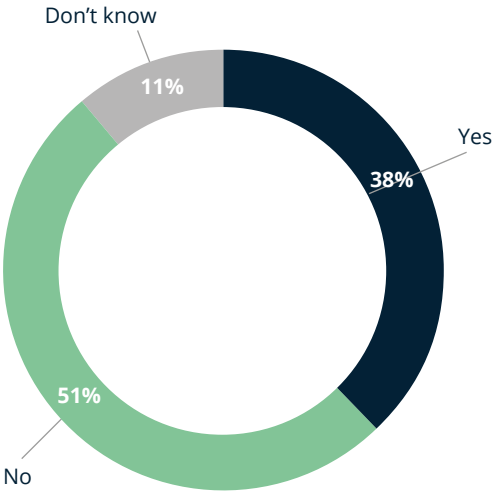
Lastly try *(3) Launching an actual project as a hackathon*. This can be internal or combination with external teams or individuals. Launching an AI pilot program will identify a range of aptitudes in critical thinking and problem-solving for AI/ML and kickstart career-paths of your internal team. Exposure to a wider audience of talent will also help in selection and set you apart as a good move for AI/ML candidates.

Skills Outsourcing and *3rd Party Software* are generally seen as solutions that help you manage and forecast cost more easily. You gain the benefits of AI/ML without additional staff and training overheads and gain cutting edge technology and skills at a quicker rate. The key here is to show benefit as soon as possible through quickly actualising use cases.

Adoption

38% Have already implemented AI/ML in some form

58% Say their desire to implement AI/ML is supported by their business



AI/ML is not understood well enough at an executive level

42%

Cited Fear of Unknown as one of the most important challenge to adoption

Insights

If this report can be boiled down to one sentence then it would read something like this: *keen to start but facing a few challenges*.

The drive towards leveraging AI/ML has existed for much of the 2010's and will start accelerating in the 2020's. The global machine learning market is projected to grow from USD7.3billion in 2020 to USD30.6billion by 2024 (*). With such a clear and rapid growth forecast, why do we still see resistance to adoption? Besides the aforementioned skills gap we see a trend in the data towards stagnant decision-making.

Slow decision-making is usually driven by fear yet we see some competing data that makes this fear hard to pinpoint. Nearly 60% of respondents say that their business supports them in their desire to implement AI/ML and yet only 25% believe that it is understood well at an executive level. While Fear of the Unknown ranks in the top 3 of adoption challenges both locally and internationally (Gartner, 2020) only 9.34% of respondents cited *Lack of Support from C-Suite* as a challenge.

Confidence is lacking and confidence must thus be driven by use. If support is strong then the next steps are the prioritization of use cases to get the first wins under the belt.

*(https://www.marketresearchfuture.com/reports/machine-learning-market-2494)

Solutions

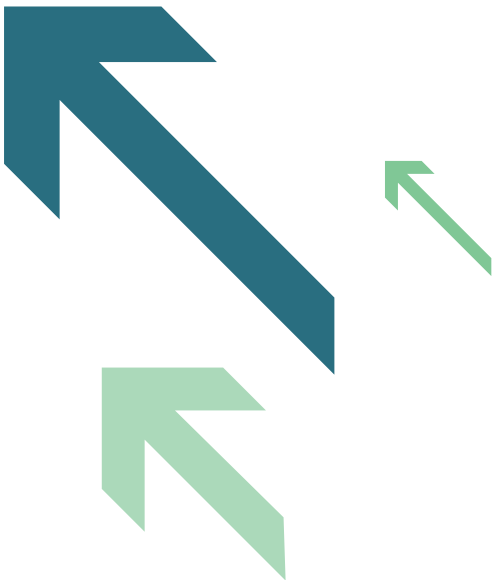
38% already have AI/ML implemented in some form within their business and have started on the path to confidence.

For the rest, the first step will be to start small.

It all begins with data scope and quality. Even before creating the strategies and use cases for AI/ML implementations you will have to sort your data out. The removal of data silos and the acquisition of enough data to make ML effective will be your first priority. For best results ensure that the data is structured. Unstructured data will lead to incorrect intelligence which will negatively impact the outcome.

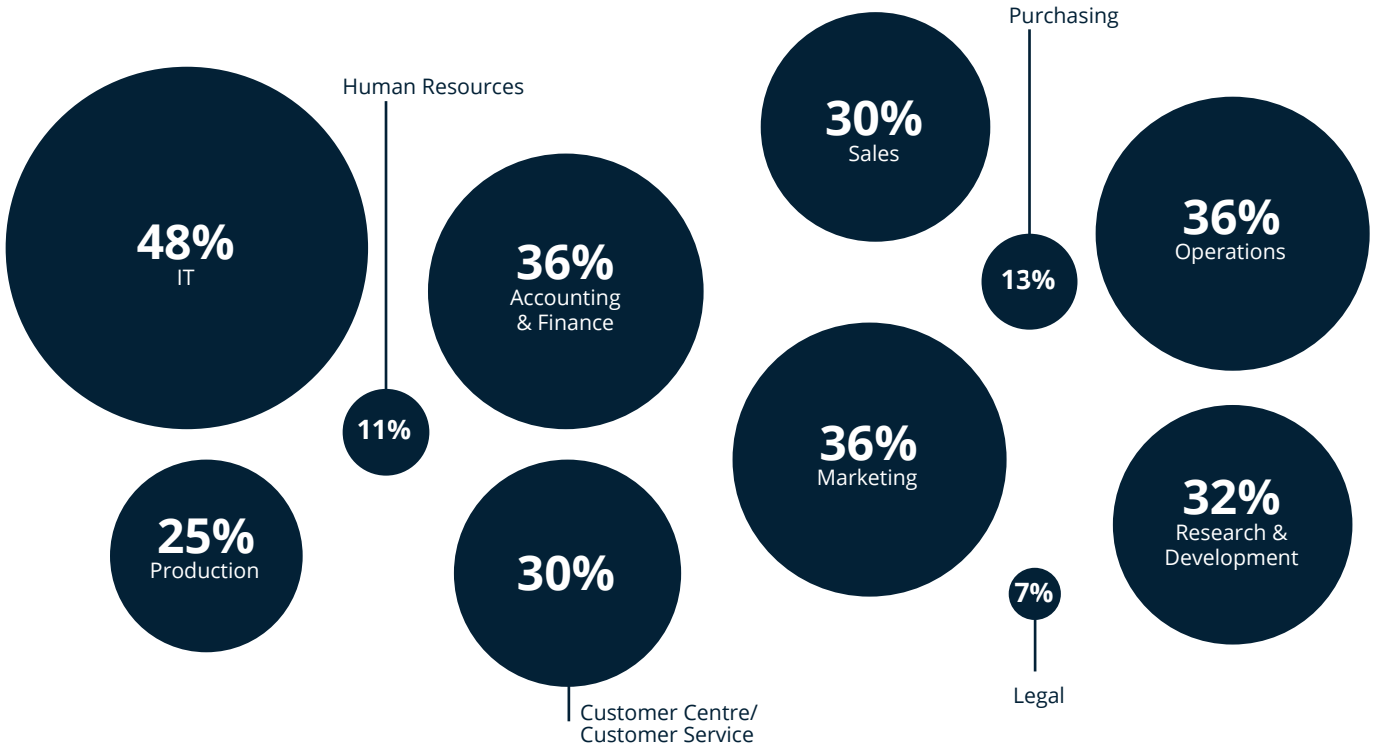
Once you have sufficient data, find the easy win projects. In data rich environments like contact centres or ecommerce websites you can simply test ready made solutions for AI. Be clear about the improvements that you want to see, record current reality and then expected improvements.

With a few, easy to manage projects you can start building a roadmap to increased adoption. Simpler projects give working examples to the executive team and confidence will rise.

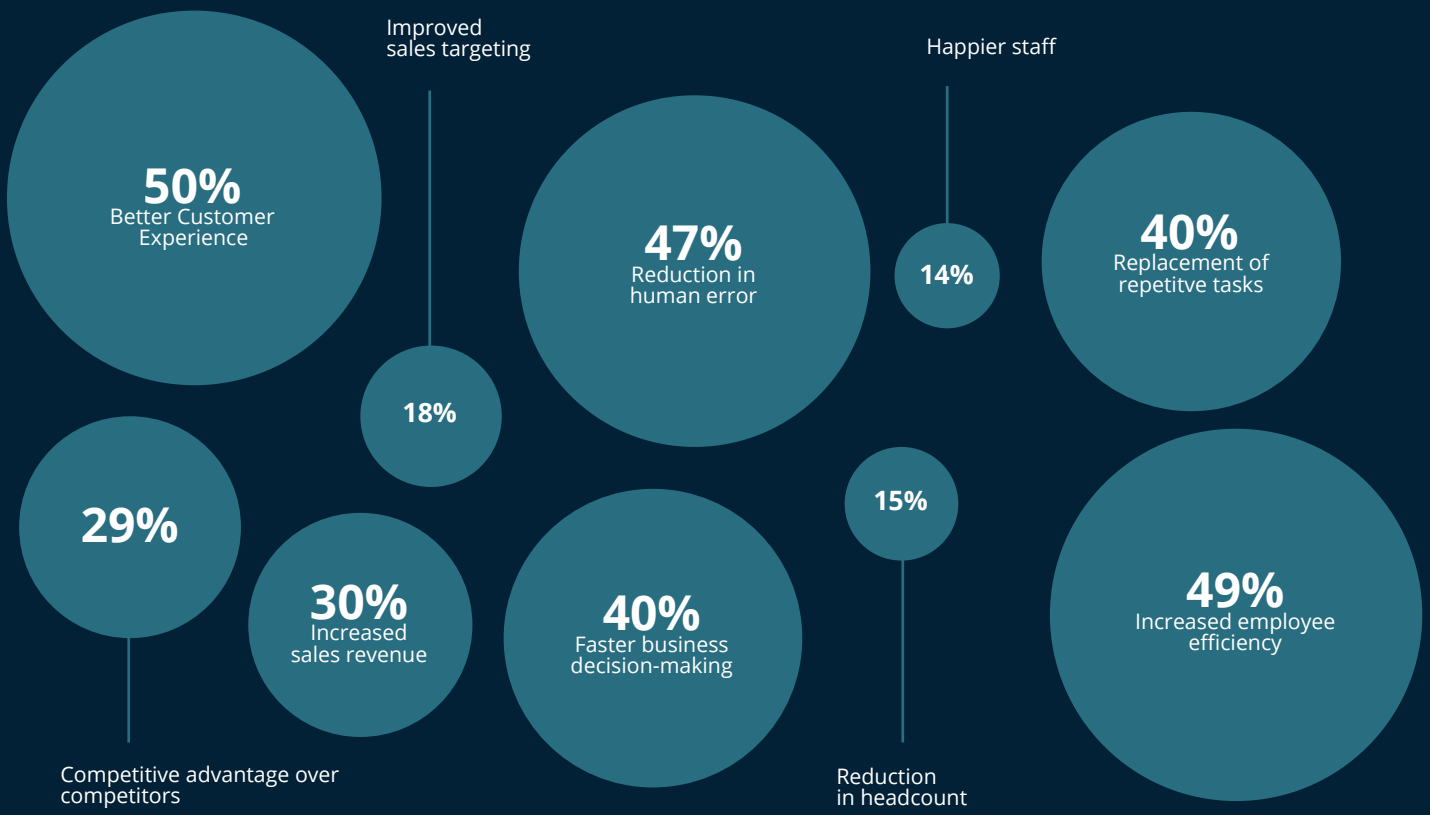


Current & Near-future Benefits

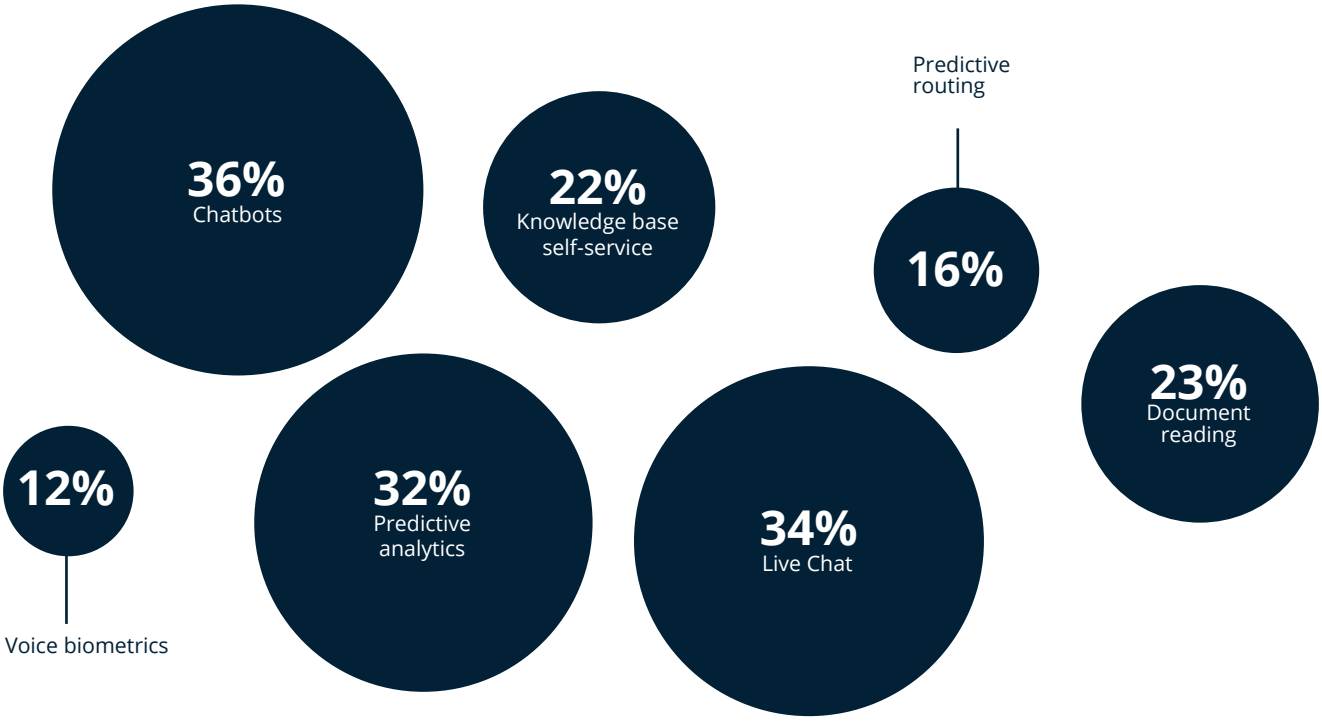
↘ Most important areas where AI/ML will show performance improvements:



↘ The AI/ML benefits for business that are viewed as the most important.



↘ **Most common AI/ML powered services that are currently in use.**



Insights

It is no surprise that IT is seen as the business division that stands to benefit the most from AI/ML adoption. As the department that manages selection and maintenance of solutions for other departments, they will carry the can for efficiency. Learning and predictive solutions will remove mundane tasks and allow generally expensive IT resources to work on more important projects.

Communication technology also falls under IT's remit. We can see that communications is clearly the winner when it comes to receiving early support in adoption. 4 of the 7 AI/ML powered services that are already in use are related to customer communication.

Finance, marketing and business operations are a tightly grouped second place of the benefiting business divisions. All 3 of these departments have seen great leaps in 3rd party software that has removed the need for human intervention or opinion. For example, general invoice collections and payments can be covered by document reading software found in leading accounting packages and advertising and creativity choices now sit in the hands of Facebook and Google's Ad platforms machine learning algorithms. Does that signal the end of bookkeepers and marketers? No. It just means that alternative skills and thinking need to be learnt so that they can benefit from the inherent efficiencies of machine learning.

The use of out-of-the-box AI solutions from 3rd party suppliers is the quickest way to experience the benefits of machine learning.

Though the outward facing goal of a 'better customer experience' was the benefit that was most picked, the other top goals pointed to an internal business drive for efficiency. They boil down to making smarter choices, better use of employees' time and fewer errors. This suggests that augmenting our ability to do better work rather than replacing us is what we are really after in AI /ML. Much of the fears associated with AI is the expected job losses though that does not to be a driving factor from an executive level. It is backed up by Gartner's claim:

"Overall, AI will not eliminate jobs. By 2020, AI will become a net-positive job motivator, eliminating 1.8 million jobs while creating 2.3 million jobs."

AI will simply allow us to do our jobs differently. As the old saying goes, "having the right tools for the job", just makes working so much easier. AI is no different, it is a tool that will help people perform their roles and responsibilities more efficiently.

Conclusion

It is clear that momentum is with AI. Just like humans, AI is not perfect. And just like humans again, AI needs time and continuous feeding of information to help it learn and grow. The human brain is not designed to comprehend every scenario or outcome, it can only decipher what it has been taught. It is time to get started

Artificial Intelligence and Machine learning represent a new frontier in business.

Like previous generations that faced new frontiers - such as personal computing and the industrial revolution - we can't predict what these changes might lead to. All we can really say is that business will be different, jobs will be different and how we think will be different. Those open to being different will be the ones that succeed.

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